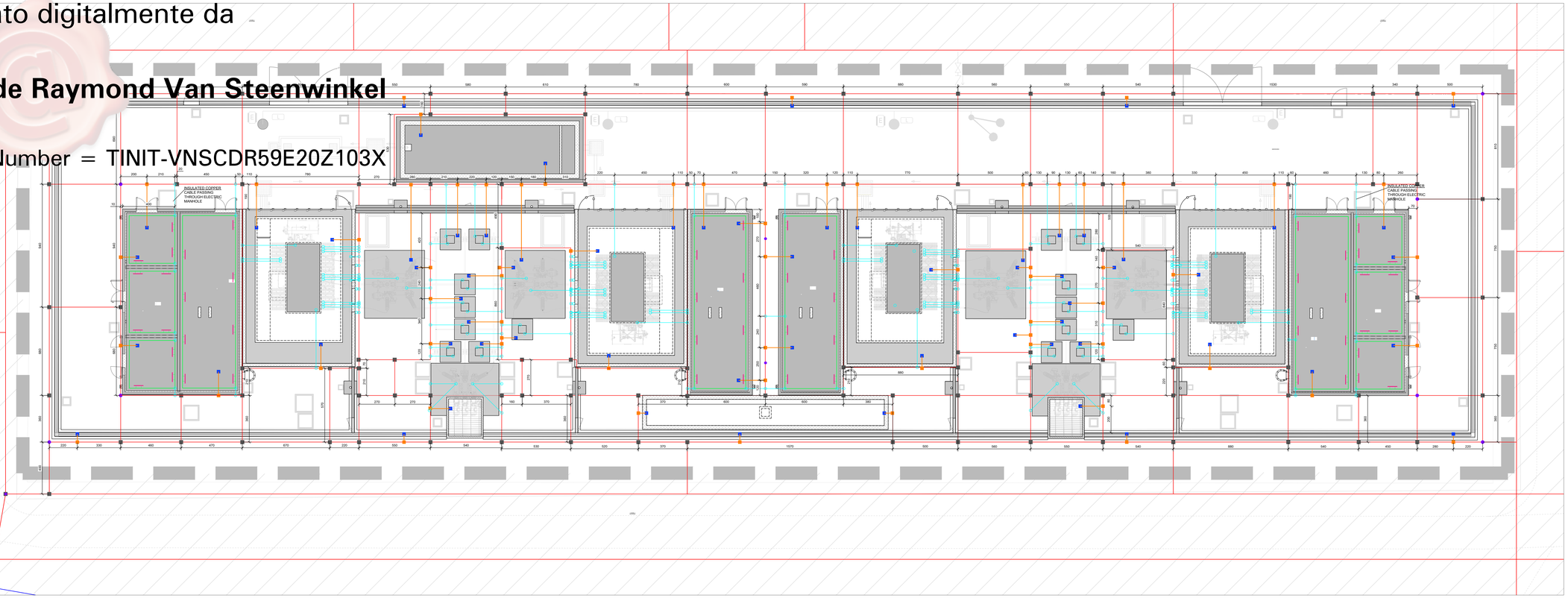
Firmato digitalmente da

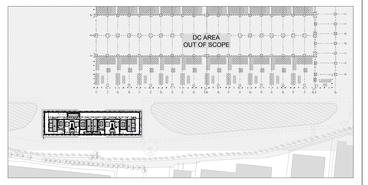
Claude Raymond Van Steenwinkel

SerialNumber = TINIT-VNSCDR59E20Z103X

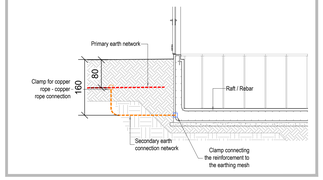
SUBSTATION DETAIL - scale 1:100



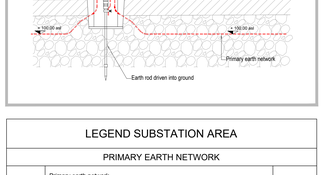
EARTHING SYSTEM LAYOUT - scale 1:2000



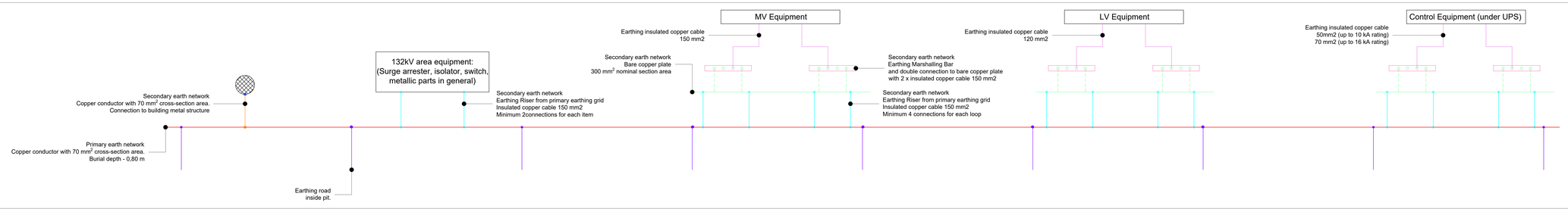
DETAIL 1
Typical connection to the main earth network
SUBSTATION AREA


Primary earth network
Clamp for copper rope - copper rope connection
160
80
Raft / Rebar
Secondary earth connection network
Clamp connecting the reinforcement to the earthing mesh

DETAIL 2
Earth pit

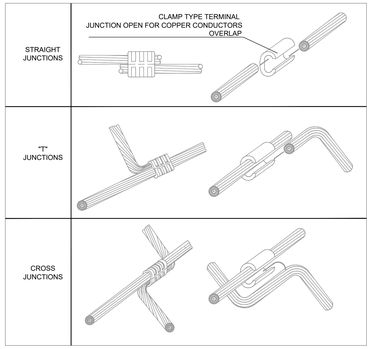


EARTHING SYSTEM GENERAL DIAGRAM

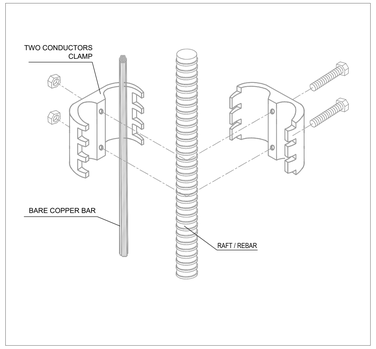

MV Equipment
LV Equipment
Control Equipment (under UPS)
Earthing insulated copper cable 150 mm2
Earthing insulated copper cable 120 mm2
Earthing insulated copper cable 50mm2 (up to 10 kA rating) 70 mm2 (up to 16 kA rating)
132kV area equipment: (Surge arrester, isolator, switch, metallic parts in general)
Secondary earth network Bare copper plate 300 mm² nominal section area
Secondary earth network Earthing Marshalling Bar and double connection to bare copper plate with 2 x insulated copper cable 150 mm2
Secondary earth network Copper conductor with 70 mm² cross-section area. Connection to building metal structure
Secondary earth network Earthing Riser from primary earthing grid Insulated copper cable 150 mm2 Minimum 2connections for each item
Secondary earth network Earthing Riser from primary earthing grid Insulated copper cable 150 mm2 Minimum 4 connections for each loop
Primary earth network Copper conductor with 70 mm² cross-section area. Burial depth - 0,80 m
Earthing road inside pit.

LEGEND SUBSTATION AREA		
PRIMARY EARTH NETWORK		
	Primary earth network Copper conductor with 70 mm² cross-section area. RED conductor, burial depth - 0,80 m above ground level.	980 m
▪	Crimpit for primary network connection at each crossing point	96
●	Inspectable earthing pits with crimpit	8
SECONDARY EARTH NETWORK		
▪	Clamps connecting rebars to the Primary Earthing Network	66
▪	Clamps connecting copper rope to the Primary Earthing Network	66
	Copper conductor with 70 mm² cross-section area	244 m
	Bare copper plate 300 mm² nominal section area	234 m
	Earthing Marshalling Bar and double connection to bare copper plate with 2 x insulated copper cable 150 mm2	58
	Earthing Riser to primary earthing grid Insulated copper cable 150 mm2 and clamp	400 m 176 clamp
For further details, please refer to the specific report		

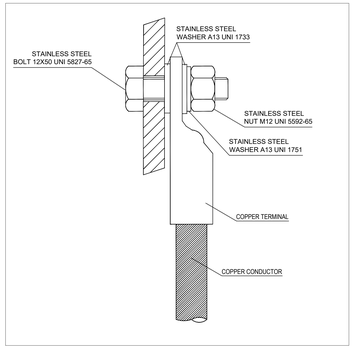
BARE COPPER CONDUCTOR CLAMPING



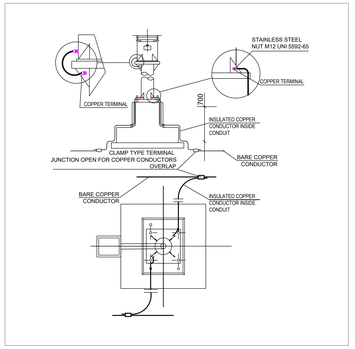
CONNECTION BETWEEN PRIMARY EARTHING AND RAFT-REBAR



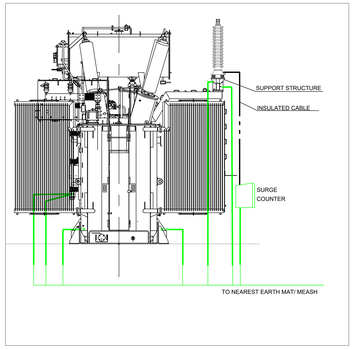
CONNECTION TO METAL STRUCTURES


STAINLESS STEEL BOLT 12X50 UNI 5827-65
STAINLESS STEEL WASHER A13 UNI 1733
STAINLESS STEEL NUT M12 UNI 5592-65
STAINLESS STEEL WASHER A13 UNI 1751
COPPER TERMINAL
COPPER CONDUCTOR

CONNECTION TO HV COMPONENTS


STAINLESS STEEL NUT M12 UNI 5592-65
COPPER TERMINAL
COPPER TERMINAL
700
INSULATED COPPER CONDUCTOR INSIDE CONDUIT
CLAMP TYPE TERMINAL JUNCTION OPEN FOR COPPER CONDUCTORS OVERLAP
BARE COPPER CONDUCTOR
BARE COPPER CONDUCTOR
INSULATED COPPER CONDUCTOR INSIDE CONDUIT

CONNECTION TO TRANSFORMER



- PER LA MAR DEI COMPONENTI DELLA LINEA DI MESSA A TERRA VEDI DOC. N° MXP-MAR-ELE-005
- FOR THE MAR OF EARTHING SYSTEM COMPONENTS SEE DOC. N° MXP-MAR-ELE-005

REVISION N.	DATE	DESCRIPTION	ELABORATED	VERIFIED	APPROVED
00	02/07/2024	First issue - ESS plant project	Idea Digital Solution	ENGIE	ENGIE

DESIGNER

Idea Digital Solution S.r.l.
Milano Via Larga, 6 - 20122 Milano (MI)

E-mail: *ideads@ideagroup.biz*

PROJECT

RTN CONNECTION PROJECT

SSE TECHNOLOGICAL INSTALLATIONS PROJECT

W5S SHOP DRAWINGS

CLIENT

Hines COMPASS property

CODE	DRAW
EL-PL-210_1	GROUNDING SYSTEM LAYOUT
DATE	**SCALE** / **LOCATION**
July 2024	1 : 100 — METROPOLITAN CITY OF MILAN MUNICIPALITY OF NOVIGLIO

PROJECT LEVEL	DRAWING CODING
W5S SHOP DRAWINGS	MXP_EL-PL-210_Grounding system layout_00

This document contains proprietary information of Idea Digital Solution S.r.l and is to be used only by the recipient for the purposes for which it was received. Any form of reproduction or disclosure without the express consent of Idea Digital Solution S.r.l is prohibited.